

Remarks: See §2.2.1, pages 19 till 21
See §2.3, pages 24 till 26
See §2.6, pages 34 onwards

Answers:

- a. $\varepsilon^{AB} = 5 \text{ ‰}$
- b. $\Delta \ell^{BC} = 4,5 \text{ mm}$
- c. $\Delta \ell = 7,5 \text{ mm}$

Explanation:

$$\text{a. } \varepsilon^{AB} = \frac{30 \times 10^3 \text{ N}}{6 \times 10^6 \text{ N}} = 5 \times 10^{-3}$$

$$\text{b. } \Delta \ell^{BC} = \frac{(30 \times 10^3 \text{ N})(1,2 \times 10^3 \text{ mm})}{80 \times 10^6 \text{ N}} = 4,5 \text{ mm}$$

$$\text{c. } \Delta \ell^{AB} = (5 \times 10^{-3})(0,6 \times 10^3) = 3 \text{ mm}$$

$$\Delta \ell = \Delta \ell^{AB} + \Delta \ell^{BC}$$